IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): ~~A method according to claim 1,~~ A method for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors, the method comprising:

correlating a signal or signals x(t) received by the one or more sensors with the signal c(t);

sampling the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation; and

determining propagation channel parameters τ and θ, which enable a most efficient reconstruction of the signals x(t) received by the one or more sensors using a maximum likelihood method,

wherein

[[the]] characteristics of the system of sensors are known, ~~and wherein~~

the signal c(t) is equal to 1,

the signals x(t) received on an antenna are expressed in a form X=S(τ, θ)h+B,

and

estimates of the parameters τ and θ are expressed in the form:

$$\hat{\theta},\hat{\tau} = \arg\min_{\theta,\tau} \| \Pi_S^{\perp}(\theta,\tau)X \|^2$$
$$= \arg\min_{\theta,\tau} \left\{ X^{\dagger}\Pi_S^{\perp}(\theta,\tau)X \right\}$$

where $\Pi^{\perp}s$ is a projector orthogonal to an image generated by the column vectors of $S(\theta,\tau)$.

Claim 3 (Currently Amended): ~~A method according to claim 1,~~ A method for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors, the method comprising:

correlating a signal or signals x(t) received by the one or more sensors with the signal c(t);

sampling the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation;

determining propagation channel parameters τ and θ, which enable a most efficient reconstruction of the signals x(t) received by the one or more sensors using a maximum likelihood method; and

~~further comprising~~ determining complex amplitudes **h** of an impulse response of the propagation channel from estimates of the parameters τ and θ.

Claim 4 (Currently Amended): ~~A method according to claim 1~~ A method for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors, the method comprising:

correlating a signal or signals x(t) received by the one or more sensors with the signal c(t);

sampling the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation; and

determining propagation channel parameters τ and θ, which enable a most efficient reconstruction of the signals x(t) received by the one or more sensors using a maximum likelihood method,

wherein

characteristics of the system of one or more sensors are not known, ~~and~~

~~wherein~~

the signal c(t) is equal to 1,

concatenated form **Y** = $\psi(\tau)\alpha$+N, where $\psi(\tau)$ is equal to the convoluted product of the unit matrix I_N and a matrix $S(\tau)=[s^1(\tau_1^1),\ldots,s^1(\tau_{P_1}^1),\ldots,s(\tau_{P^U}^U)]$, and α contains responses of paths of different users, and

delay vectors τ are estimated from

$$\begin{aligned}\hat{\tau} &= \arg\min_{\tau} \| \Pi_{\Psi}^{\perp}(\tau)\, Y\|^2 \\ &= \arg\min_{\tau} \mathrm{tr}(Y^{\dagger}\Pi_{\Psi}^{\perp}(\tau)Y)\end{aligned}$$

where $\Pi_{\Psi}^{\perp}$ is a projector orthogonal to an image generated by line vectors of $\psi(\tau)$.

Claim 5 (Currently Amended): ~~A method according to claim 1,~~ A method for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors, the method comprising:

correlating a signal or signals x(t) received by the one or more sensors with the signal c(t);

sampling the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation; and

determining propagation channel parameters τ and θ, which enable a most efficient reconstruction of the signals x(t) received by the one or more sensors using a maximum likelihood method,

wherein

the signal c(t) is different from 1, and ~~wherein~~

[[the]] characteristics of the system of one or more sensors are known and parameters τ and θare estimated from

$$\theta,\tau = \arg\min_{\theta,\tau} X^{\omega} R_b^{-1} \Pi_{\Phi}^{\perp}(\theta,\tau)\ X^{\omega}$$

$$\Pi_{\Phi}^{\perp} = I - \Phi(\theta,\tau)(\Phi^{\dagger}(\theta,\tau)R_b^{-1}\Phi(\theta,\tau))^{-1}\Phi^{\dagger}(\theta,\tau)R_b^{-1}$$

Claim 6 (Currently Amended): ~~A method according to claim 1,~~ A method for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors, the method comprising:

correlating a signal or signals x(t) received by the one or more sensors with the signal c(t);

sampling the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation; and

determining propagation channel parameters τ and θ, which enable a most efficient reconstruction of the signals x(t) received by the one or more sensors using a maximum likelihood method,

wherein

the signal c(t) is different from 1, and ~~wherein~~

[[the]] characteristics of the system of one or more sensors is unknown, and

a delay vector is expressed by

where
$$\hat{\tau}[[.]] = \arg\min_{\tau} Y^{\omega} R_n^{-1} \Pi_s^{\perp}(\tau) Y^{\omega}$$
$$\Pi_s^{\perp} = I - S(\tau)(S(\tau)R_n^{-1}S(\tau))^{-1}S(\tau)R_n^{-1}$$

Claim 7 (Previously Presented): A method according to one of the claims 1 to 6, applied in MIMO (Multiple Input Multiple Output) or SIMO (Single Input Multiple Output) type applications.

Claim 8 (Currently Amended): A device for estimating one or more parameters of a propagation channel with a priori knowledge of a signal c(t) in a system comprising one or more sensors s(t), the device comprising:

a device adapted to correlate a signal or signals x(t) received by the one or more sensors s(t) with the signal c(t)[[,]] ;

a device adapted to sample the signal or signals x(t) after correlation at a sampling period Te and selecting a number of samples per concatenation; and

a device adapted to determine parameters of the propagation channel, including τ or θ, which enables a most efficient reconstruction of the signal or signals x(t) by a maximum likelihood method,

wherein

characteristics of the system of sensors are known,

the signal c(t) is equal to 1,

the signals x(t) received on an antenna are expressed in a form X=S(τ, θ)h+B,

and

estimates of the parameters τ and θ are expressed in the form:

$$\underline{\hat{\theta},\hat{\tau} = \arg\min_{\theta,\tau} \| \Pi_S^{\perp}(\theta,\tau) X \|^2}$$

$$\underline{= \arg\min_{\theta,\tau} \left\{ X^{\dagger} \Pi_S^{\perp}(\theta,\tau) X \right\}}$$

<u>where $\Pi_S^{\perp}$ is a projector orthogonal to an image generated by the column vectors of $S(\theta,\tau)$.</u>

Claim 9 (Previously Presented): A radiocommunications receiver comprising the device according to claim 8.